Stat 305
Fall 2019
Syllabus

1. Times and places:
   - Class meets Tu/Thur at 9:25 - 10:40 AM, HRZ 212..
   - Labs meet Monday 7-9 PM and Tuesday from 4:30 - 6:30, HRZ 212. You may attend either or both labs each week.
2. Text: Fundamentals of Biostatistics - Rosner. 8th Edition.
3. Instructor: E. Neely Atkinson
   - office: DH 2099
   - office hours: Tu/Thur 11AM - noon.
   - email: enatk@rice.edu
4. Course components.
   - Lectures. Please read the appropriate chapters in the text before the start of lectures each week. The syllabus shows which chapter we will cover each week. There is also a file `schedule.280.xls` posted to Canvas which shows what material is covered each week. Lectures will be used for: 1) responding to student questions 2) working problems 3) expanding on the more difficult material in the readings and 4) extra material not covered in the text.
   - Labs. Labs will be used to make sure you have the skills to work problems for homework and exams. Labbies will assist you with your homework and demonstrate how to use software to work problems. They will also answer questions about lecture material.
   - Reading assignments. There will be assigned readings from the text each week.
   - Homework assignments. There will be weekly homework assignments. These will be posted to Canvas. I will try to remember to mention them in class, but it is your responsibility to check Canvas. The assignments are due whether I remember to announcement them in class or not. Usually, I will make an assignment on

Tuesday of each week; the assignment will be due the following Tuesday. This schedule will be modified for holidays.

Your lowest homework score will be dropped. Suppose there were only 3 assignments and they have have possible scores 1, 5, 10. Suppose your scores are 0, 3, and 8. Convert these to 0/1, 3/5, and 8/10 or 0, 0.6, 0.8. The first assignment would be dropped and your average homework score would be $(0.6 + 0/8)/2 = 0.7$. Thus all homeworks have equal weight in the final score.

Homework should be submitted electronically as a single file. The file may be in either Word or pdf format. The purpose of homework is to learn and practice the material covered in lectures and the text. You may use whatever resources you find helpful to work the assignments, including other students and the Web. However, you must turn in your own work. Submissions which are copies of another student's work will be considered a violation of the Honor Code.

Late submissions will not be accepted.

Show your work for homework. Do not just give the answer. If you use R to work the problem, show both your R commands and the output from R.

- Exams. There will be a midterm exam and a comprehensive final. All tests are take home.

5. Canvas. We will make extensive use of Canvas. All class material will be posted there. All homework will be submitted through Canvas. I will make important announcements using Canvas.

6. Grading. Your final grade will be based on homework (25%), the midterm (25% each), and the final (50%).

   I guarantee the following scale; thus, if you get an 84, your are guaranteed a B. I reserve the right to adjust the scale downward if I feel that a revised scale would better reflect my evaluation of the class achievement. Suppose your final score for the class is s.

$98 \leq s \leq 100$	A+
$93 \leq s < 98$	A
$90 \leq s < 93$	A-
$87 \leq s < 90$	B+
$83 \leq s < 87$	B
$80 \leq s < 83$	B-
$77 \leq s < 80$	C+
$73 \leq s < 77$	C
$70 \leq s < 73$	C-
$67 \leq s < 70$	D+
$63 \leq s < 67$	D
$60 \leq s < 63$	D-
$s < 60$	F

A typical distribution in the class is 40% A, 40% B, 15% C, 5% D or F.

7. Software. We will use the R programming language for this class. This software will be covered in labs and tutorials. No previous experience with programming in general or R in particular is required or expected.

8. Getting help. You are encouraged to ask questions both in class and during labs. I will also hold regular office hours and will respond to emails.

9. Course Outline. This is a rough outline of the material. This may be adjusted depending on how the class progresses.

   (a) Week 1, starting 8/26: Chapter 2 - descriptive statistics.

   (b) Week 2, starting 9/2: Chapter 3 - probability.

   (c) Week 3, starting 9/9: Chapter 4- discrete probability distributions.

   (d) Week 4, starting 9/16: Chapter 5 - continuous probability distributions.

   (e) Week 5, starting 9/23: Chapter 6 - estimation.

   (f) Week 6, starting 9/30: Chapter 6 continued.

   (g) Week 7, starting 10/7: Chapter 7 - hypothesis testing, one-sample inference.

   (h) Week 8, starting 10/14: Review and test, Chapters 2–6.

(i) Week 9, starting 10/21: Chapter 7, continued.

(j) Week 10, starting 10/28: Chapter 8 - hypothesis testing, two-sample inference.

(k) Week 11, starting 11/4: Chapter 10 - hypothesis testing, categorical data.

(l) Week 12, starting 11/11: Chapter 10, continued.

(m) Week 13, starting 11/18: Chapter 11, - regression.

(n) Week 14, starting 11/25 Chapter 11, continued.

(o) Week 15, starting 12/2: Review for final.

10. If you know that you will be gone due to official school activities, contact me before your absence to make arrangements for any homework, labs, or tests during your absence.

11. If you have a disability that requires accommodation, please contact both me and Disability Support Services in Allen Center. Possible accommodations include, but are not limited to, extra time for tests, special settings for tests, the services of a note taker, and permission to record lectures. Your request is confidential.

12. If you disagree with (or even have a question about) the grading of homework or an exam, you have one week from the time the work is returned to bring me your question. If I do not hear from you in one week, the grade is final.

Purposes of class. This course is meant to give you a solid grounding in the basic principles of statistical analysis. At the end of this course:

- You will understand the basic principles which underlie all statistical analyses.
- You be be able to perform a range of basic statistical analyses.
- You will be able to understand the ideas behind more advanced analyses, even if you do not completely understand all the details of the analyses or are not able to perform them yourself.
- You will be able to consult effectively with an expert statistician if the need arises in your work for the use of advanced techniques.
- **Important points.**

- No late homework is accepted.
- You have one week from the time a grade is posted to ask about the grading. Do not come to me at the end of class looking for extra points because you disagree with the way something was graded at the start of class.
- There is no extra credit.
- Acceptable excuses for taking a test late are: travel for a Rice event; important events such as interviews; family emergencies or situations; if you have 3 exams in 2 calendar days.
- Let me know if you need special accommodations.
- Tests are take home and are due at 5 PM in my office on the Friday of the week given in the syllabus.